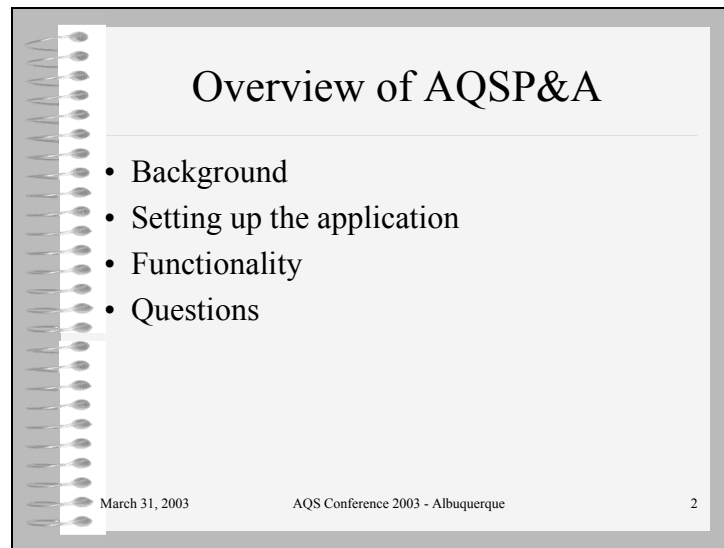


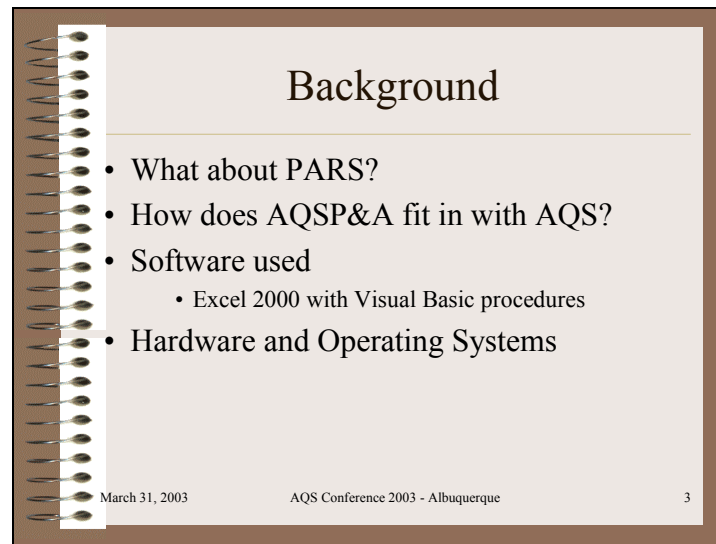
**Air Quality System  
Precision and Accuracy Data Transaction Generator  
(AQSP&A)**



**Training Workbook**

*2003 AQS Conference*  
March 31 – April 4, 2003





### **What about PARS?**

- Many agencies use PARS, and may continue to do so.
- PARS does not run on newer operating systems (e.g Windows 2000).
- IMG will support PARS, but no new enhancements.

### **How does AQSP&A fit in with AQS?**

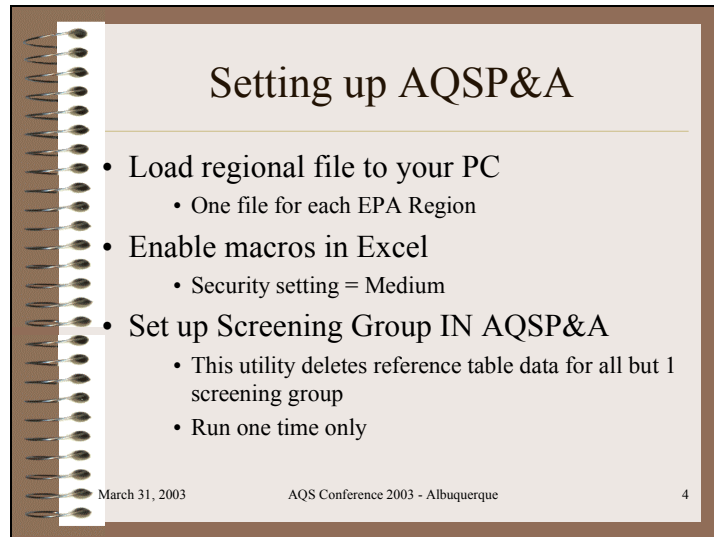
- AQSP&A is intended to simplify the creation of the 2 transactions for Precision and Accuracy data (RA and RP).
- AQSP&A is not a stand-alone database; it is not designed to store data and generate reports.
- AQSP&A contains “reference” worksheets of valid monitors, valid protocol combinations (parameter, method, unit, sampling duration) and valid code values for several different fields on the RA and RP transactions.
- These reference worksheets are loaded from the AQS database using Discoverer retrievals.

### **Software used**

- AQSP&A is an Excel 2000 workbook with Visual Basic for Applications used to automate validations, look ups, and generation of transaction files.

### **Hardware and Operating Systems**

- AQSP&A runs on Windows 98, 2000, XP operating systems.
- Files can be opened with Excel 97, Excel 2000, and Excel XP (2002).
- Note: the set up screening group function in AQSP&A uses a VBA function new to Excel 2000; therefore Excel 97 users receive an error for this function. Call Bill Frietsche or Michael Hamlin of IMG to receive a file specifically for your screening group(s).

**Load regional file to your PC**

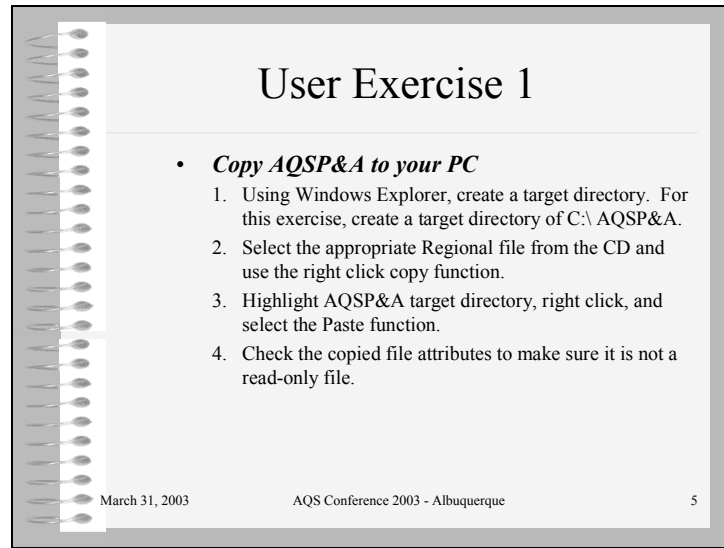
- The Application on CD contains one file for each EPA Region.
- Files are similar, except that reference worksheets are loaded with monitor data specific to the screening groups located in the EPA Region.
- User Guide file is also included with application.
- You can use any of the files, however transactions for monitors outside of your screening group will reject during the AQS batch load.
- If you are copying files from a CD onto your PC, you should check file properties with Windows Explorer and be sure that the copied file is not “Read-Only”. If so, deselect “Read-Only” before opening the file in Excel. Windows XP does not set the attributes to Read-Only, however Windows 2000 does.
- You can run AQSP&A as a Read-Only file, but you cannot save your worksheets. You can generate a transaction file, however.
- Note: Following an initial trial period, AQSP&A will be available from the EPA TTN website via download. See last page for URL.

**Enable macros in Excel**

- When starting Excel, you may receive a prompt to enable macros.
  - Excel security setting of “Low”      =    no prompt, macros are run.
  - Excel security setting of “Medium”    =    prompt to enable macros or not.
  - Excel security setting of “High”      =    no prompt, macros are not run.
- If macros are not set to run, the AQSP&A application will not work.
- To enable macros, open Excel and select Tools / Macro / Security. Select “Medium”. With this setting, Excel will prompt you each time you open a file that contain Macros.
- Note: A macro is a set of instructions that runs “behind the scenes” when certain actions are performed.

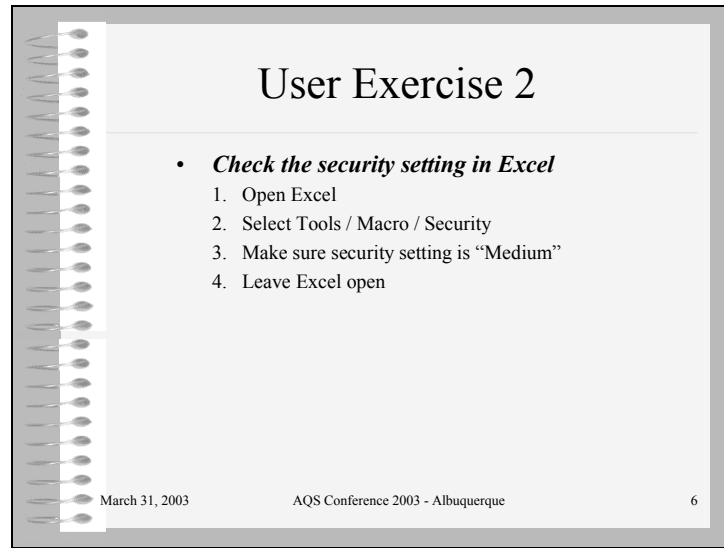
**Set up Screening Group in AQSP&A**

- Click the set up screening group button.
- Choose one screening group from dialog window.
- All other monitors and associated reference data will be deleted, leaving only your screening group data.
- See User Exercise 3 notes.



**Note:**

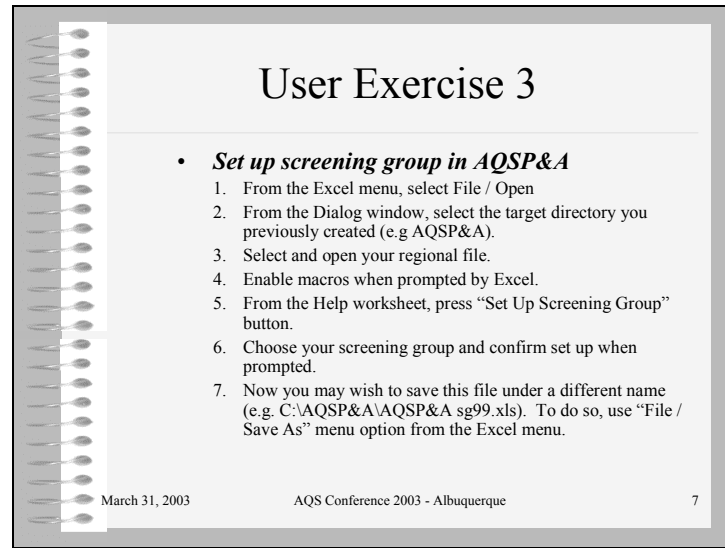
- Because this application does not function as a database of transactions, you may wish to develop a directory and file naming convention to keep track of transaction files that you have submitted and transaction files that you are working on. You might want to keep different versions (for different screening groups) in different directories. The use of conventions is up to you.
- For this exercise, we have arbitrarily chosen to use C:\AQSP&A as the installation directory.

A graphic of a spiral-bound notebook with a grey cover and a white page. The page contains the title 'User Exercise 2', a bulleted list of instructions, and footer text at the bottom.

## User Exercise 2

- ***Check the security setting in Excel***
  1. Open Excel
  2. Select Tools / Macro / Security
  3. Make sure security setting is "Medium"
  4. Leave Excel open

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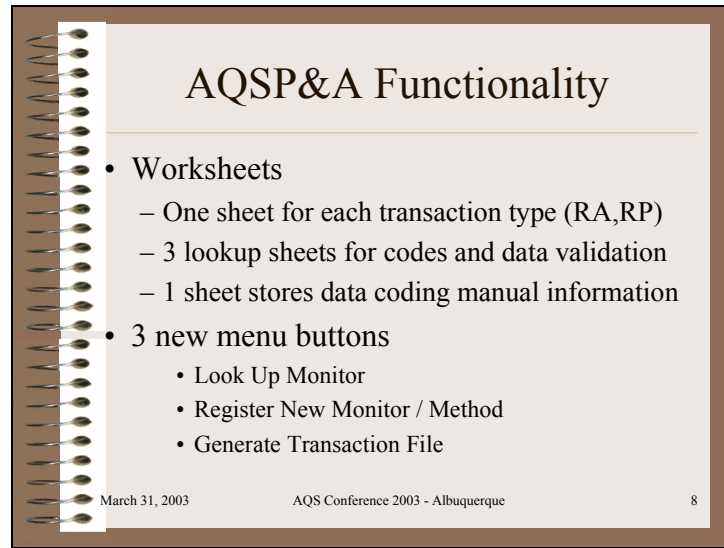
**Notes:**

- "Set Up Screening Group" is a one time utility. After it is run, only monitors and methods owned by the one selected screening group remain in the reference worksheets. It cannot be run again from the same Excel file for a different screening group.
- If you work with more than one screening group, you may wish to save a backup file of the complete Regional file, and then make a copy for each screening group (e.g. AQSP&A sg1.xls). Then for each copy, use the Set Up Screening Group utility for the appropriate screening group.
- AQSP&A will work properly without running the Set Up Screening Group utility. All of the criteria monitors in the region will be available in this case. But with this scenario, you might create transactions for monitors that are not in your screening group. AQS will reject transactions for monitors not owned by the screening group submitting them.

**Note about Screening Groups**

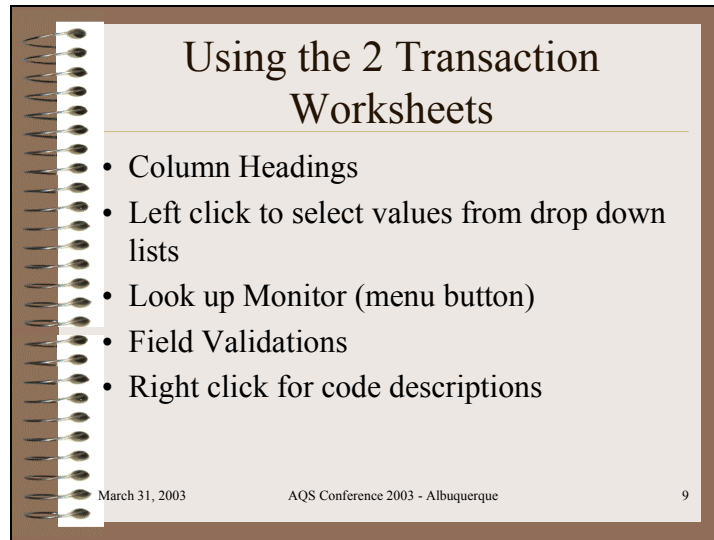
- Screening Group is a security feature in AQS. Every monitor is "owned" by only 1 screening group. You must be a member of the monitor's screening group to insert, update, or delete any data in AQS for that monitor and its underlying data (raw data, P&A data, etc.)





**Notes:**

- The Coding Manual worksheet contains entries only for fields on transactions RA and RP.
- This application adds 3 new menu buttons to your Excel menu. These buttons work for AQSP&A only. If you have other Excel files open at the same time as AQSP&A, these buttons will still be visible when working on the other files. If you use them from other Excel files, they will not work (you will get error messages; but no harm is done).

**Column Headings**

- Mandatory fields (for Action Code = I) are black, optional fields are blue.
- Right click the column heading to see the data coding manual entry for the field.

**Values from Drop Down Lists**

- Drop down lists for selecting input values are generated in 2 ways.
- Look up ranges from the Code Values worksheet are used to generate lists for fields that are independent of other field values.
- Look up values for dependent fields are created with visual basic procedures based upon other field values. Examples of this are method, duration, units, and type audit. If drop down lists are blank, you should check the other field values.  
Example: If you are creating an Accuracy transaction (Type RA) to submit flow audit data, then choose the correct units. If you choose ug/cubic meter, instead of units for flow, the audit class drop down list will not have any values, because it is dependent on monitor, method, units, and duration (from the accuracy audit reference worksheet which is loaded from the accuracy audit protocol table in AQS).

**Look up Monitor Button**

- You can type in the monitor id fields (state – county – site – parameter – poc) one by one, or you can use the Look up Monitor button. Using the Look Up Monitor button will reduce your chance of typos, and also give you a list of the valid monitors for your screening group. You will need to know the county code for the monitor you wish to add to the worksheet. The cell values in the monitor id columns must be empty for the row you are populating when using the Look Up Monitor button.

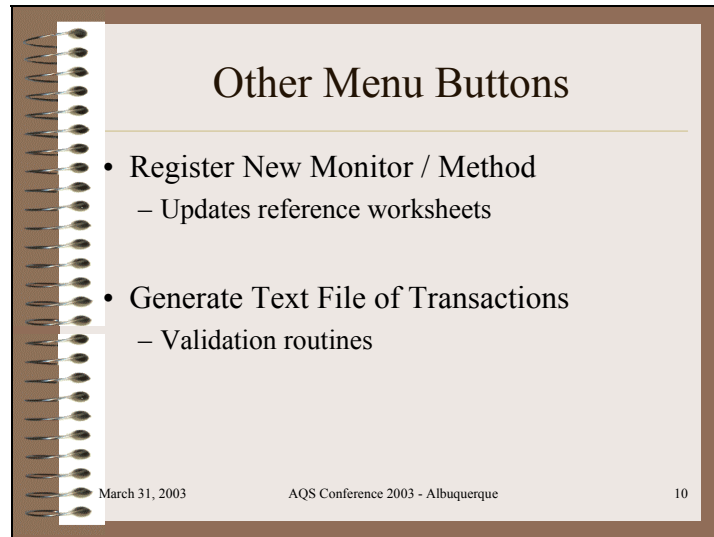
**Field Validations**

- Field validations are used to help prevent typos as well. Validation formulas will not stop you from inputting values, but you will receive a warning. The validation formulas are part of the information contained in the cut/copy/paste function, so be careful not to overwrite or delete validation formulas unintentionally. See the “Using

Cut / Copy / Paste” item under the “Miscellaneous” slide further in this training presentation.

**Right Click for code descriptions**

- Code descriptions are presented in message windows when you right-click code values. Right-clicking any of the monitor ID fields will give a description of the monitor in a message window. This is an important edit check. After inputting the monitor ID fields, you should validate the monitor with a quick right-click. As explained in the next slide, the validation programs do not validate the monitor IDs at the time of transaction file generation. The validation programs depend on valid monitors being input via use of lookups and right clicks.

**Register New Monitor / Method**

- This button provides the ability to add monitors, methods, units, and durations to the reference worksheets. You must know all of these values to add a new monitor / method. The values you add must be IDENTICAL to values you have created in AQS for fields, or else the transactions will reject in AQS.
- After creating a new monitor, or adding a new method, unit, or duration code, the new value(s) will be available in the drop down lists of values on the transaction worksheets.
- This function will allow you to keep AQSP&A “in sync” with AQS, without downloading a new updated version of AQSP&A. However, an alternative to using this function is to obtain a new copy of AQSP&A; one that has been loaded from AQS after you have added the new monitors / methods to AQS. IMG can help you with this.

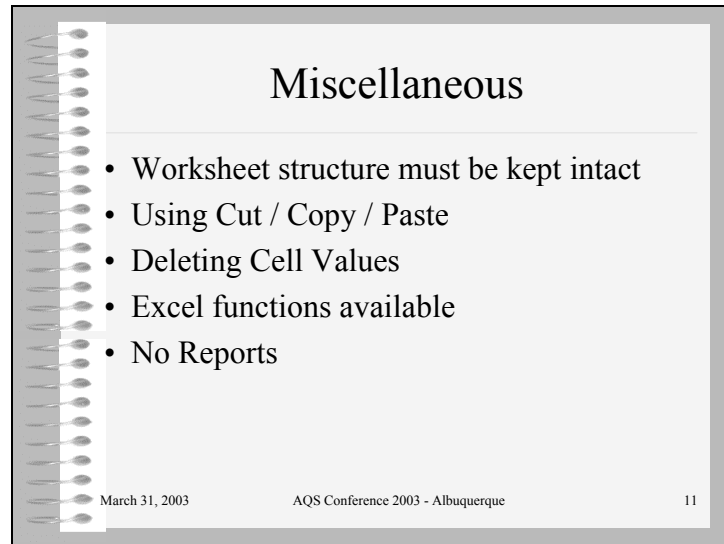
**Generate Text File of Transactions**

- To use this button, you must select the row or rows of data from the worksheet you wish to generate transactions for. You do not need to select all of the appropriate columns, the application will select them for you. After you have selected the rows, you click the “Generate Text File of Transactions” button. Validation routines run and will provide you with error messages about fields in error. Values in error will be highlighted in red. As mentioned above, be sure to manually validate the monitor ids at the time of data input, these are not validated at the time of transaction generation.
- After successful validation, you are prompted for a file name for the transaction text file. You must specify the drive, path, and file name. Transaction files are created in the new AQS format with pipe delimiters.
- Files will not be created if the validation procedure is not successful.
- After successful transaction file creation, the worksheet rows are highlighted with gray.

- Validations are performed as follows:
- Mandatory fields (for Action Code = I) are validated. An error is generated if you are missing mandatory fields. Numeric checks on actual and indicated values are performed. The values are checked to conform to the AQS edits, which are dependent on the parameter. For the RA transactions, values are checked against allowable % differences, and audit level ranges. For criteria pollutants reported in parts per million or parts per billion, a conversion is done prior to range and max value checking. For the RP transaction, allowable maximum values and allowable % differences are checked.
- For collocated monitors, the raw data sample values must match the P&A actual values. These edits are not performed in AQSP&A, because this application does not hold raw data values. However, simulating some of the other edits that AQS runs on the transaction set should reduce the number of AQS rejections at time of load (hopefully).

**Notes:**

- Cell validations performed while you are populating cells on the transaction worksheets give “Warnings”, not “Stops”. In contrast, the Validation routine will not generate a transaction file if an error is encountered. The validation routine that runs prior to creating the text transaction file stops on an error, and you will not generate a text file output until the validation routine runs without finding error conditions.
- As you work with AQSP&A, please let us know if preventing transaction file generation when errors are encountered presents a problem to you.
- Delete and Update transactions are validated to contain all of the mandatory fields for Inserts. If this impacts “user friendliness”, we will improve the validation routines to be action code specific. Your feedback on this would be appreciated.

**Worksheet Structure**

- The structure of the worksheets must be maintained. In other words, inserting columns, deleting the column headers, renaming worksheets, etc. will prevent the visual basic procedures from running correctly. Reformating cell patterns (color) and fonts is ok.
- The worksheet cells are all formatted as text. You may be able to change some of the formats without impacting the application's integrity, however test what you change before saving the file. Because transactions are text files, everything is treated as text throughout, and if this does not present you with problems, it is best to leave the formatting as text.

**Using Cut / Copy / Paste**

- When you cut/copy and paste in Excel, cell validations are included. To avoid overwriting validation formulas, you should use Paste Special / Values rather than Paste. Also, the right click menu of functions is not available because right click is being used for code look ups. Instead, use the Excel menu to access those functions (format, cut, copy, paste, etc).

**Deleting cell values**

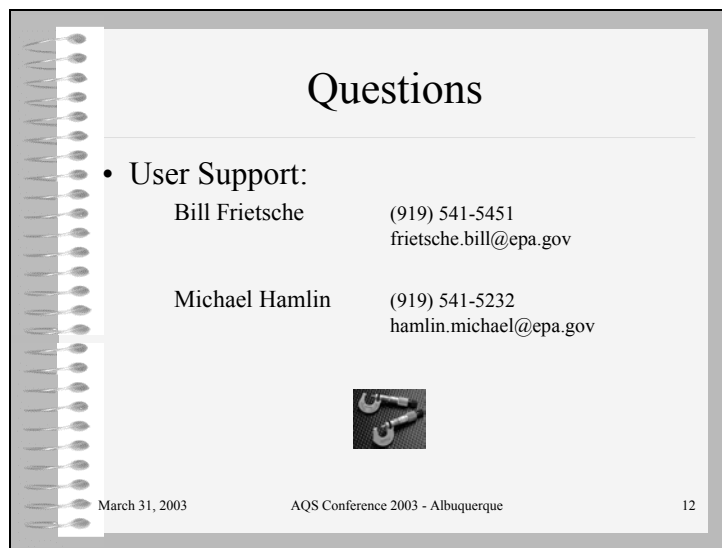
- If you blank out values with a space, rather than delete, you will get validation errors in some places stating that you have an incorrect value (from the space). Use the delete key to remove cell values, rather than "spacing over them", and you will not have any spaces left as the field value.

**Excel Functions**

- The capabilities provided by Excel software are available for you to use... AQSP&A is just an Excel file. For example, you can import text files, add new worksheets, change fonts, specify print ranges, sort (don't sort the headers), copy, etc. When trying an Excel function for the first time, make sure you have a backup of your file in case.

**No Reports**

- If you need to print out your transactions, Excel has some print capability. Other reporting needs, such as statistical summary information, are available from AQS after loading your data into AQS.



**Note:**

We will be providing AQSP&A as zipped files on the TTN web page in the near future. As improvements are made to the software, or when updated reference worksheets are needed, we will refresh the files on the TTN. The URL for our TTN website is:

<http://www.epa.gov/ttn/airs/airsaqs/>

Thank you for attending this training course. Please let us know what think about this application, and areas that could be improved to improve user-friendliness.



